VELVET ANTLER: PLACEBO, PANACEA, OR PASSING FANCY?

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In the brief time allotted for this banquet speech, I hope to establish that the reindeer industry in most of the circumpolar nations is, or shortly will be, in a rather uncertain state, that reindeer producers will soon be pressing for new technology to increase the production of meat and especially velvet antler, and that modest increases in production will be possible through the application of techniques developed for sheep and cattle. I will argue that quantum jumps in production can also be achieved through new technology which can be developed through the generous support of basic research, and, lastly, I will emphasize the wisdom of developing contingency plans now to ease and to facilitate the transition of a reindeer industry based on the sale of wet velvet antler to the more traditional, and certainly more stable, reindeer meat industry.

I think everyone is aware of the sudden and almost exponential rise in interest in the wet velvet antler industry. My colleague Ken Drew tells me that in 5 years time, New Zealand deer farmers expect to be harvesting the antler from at least 500,000 red deer and red deer/elk hybrids that are managed on deer farms especially designed for this purpose. Five years ago, no deer were managed for this purpose in New Zealand!

Similarly, reindeer producers in Alaska and Canada are now emphasizing antler production and the antler buyers are renewing efforts to develop new sources of antler wherever reindeer are now being produced. It is no secret that antler buyers have, for years, been trying to buy velvet antler from Norway, Sweden, Finland, the Soviet Union, Greenland, and from the Arctic islands off Alaska. And it is also no secret that this can be an extremely lucrative business for the antler seller--especially when prices are established under a competitive bidding scheme. For example, I know one producer in Alaska who was paid $110/kg this year for reindeer antler. The real champions in the game are, however, the New Zealanders who, by insisting on competitive bidding, received $240/kg for red deer antler in 1979 and as a direct result, in a sort of avalanche syndrome, the price of breeding stock there jumped from about $500/head in 1978 to more than $2,000/head in 1979!

And so you can quickly appreciate the sudden and intense interest in producing as much antler as possible and by whatever means possible. This statement, of course, begs the question, "What means are possible and what increases in production might we anticipate?"

If we are thinking in terms of a herd that is already structured by age and sex for maximum antler production, then I have no doubt that a two- to fourfold increase in antler production is possible through application of known and well established techniques. For example, increases of this order of magnitude could be accomplished through selective breeding programs, progeny testing programs, and through rigorous cull and slaughter programs. Unfortunately, the production of proven sires via the progeny testing technique takes time, about 6 to 7 years if we start work with breeding stock of unknown genetic background. And further, selection of breeding stock based only on phenotype criteria can be a risky business, especially when we have no knowledge of the heritability of antler phenomena.

Quantum jumps in the quality and quantity of velvet antler should also be possible through new technologies that derive from research on the hormonal regulation and control of bone growth and development. Endocrinologists now working with red deer and white-tailed deer, are discovering hormones and both analogs and antagonists of hormones that have profound effects on antler growth rate and on the rate of ossification.

Unfortunately, the promise of this new technology cannot be exploited for the benefit of our reindeer herders until we have a better understanding of the endocrine systems in reindeer and this will not be possible until government agencies, producers, and especially the buyers provide the financial support for needed research programs.

Why can't we simply apply white-tailed deer science to reindeer science? Because we know that the endocrine systems of reindeer are unique--at least in respect to antler phenomena. Antlers develop in both male and female reindeer calves shortly after parturition--not so for other members of the deer family. Female reindeer of all ages produce antlers--not so for other members of the deer family. Castrated reindeer produce antlers every year following castration--not so for other members of the deer family.

What can we reasonably expect to accomplish through an intensive research effort? We can expect to increase the amount of antler produced and we can expect to decrease the rate of ossification. Moreover, it is conceivable that by decreasing the rate of mineralization, antler harvest might be postponed until early fall, and from a management standpoint this would be highly advantageous. Antlers would be heavier but less ossified and therefore far more valuable. Fawns would be larger, stronger, and hence better able to survive the rigors of a mass handling. Shorebirds, waterfowl, and other nesting species would have hatched their young weeks earlier and thus escape being trampled by the large herds and the herders would be able to perform many important preventive medicine and herd management tasks--including vaccinations and inoculations against infectious diseases, intestinal parasites, and warble larvae. This would also be an ideal time to select and identify inferior reindeer for slaughter at a later date.

What we really need is a well funded Center for Antler Research; one that is reasonably staffed with skilled endocrinologists and graduate students with backgrounds in reindeer research and production. But that in itself is a problem. So far as I know, the only well trained endocrinologist that has a career background with reindeer isn't even working in her laboratory today. She is here, participating in this conference! And I recognize our good friend and colleague Dr. Tata Ringberg from the Institute of Medical Biology at the University of Tromso here in Norway.

Thus knowledge of research possibilities based on work with other animals as well as the promises of high yield through known management techniques gives us hope that antler production might be increased dramatically in less than a decade. This means that if funding becomes available to conduct the necessary inquiries and to put the new technology to work, we might anticipate that populations of reindeer will increase rapidly--at least until the reach the carrying capacities of the ranges. We should also witness very large increases in the harvest of wet velvet antler and many herd owners should be substantially wealthier than they are today.

Antler production therefore appears to be the panacea for all the ills of the reindeer industry. But is it? Perhaps we might spend just a few minutes reflecting on possible consequences of committing ourselves to the single-minded pursuit of this glamor industry.

Of major concern is the fact that no one knows, or if they do know they are not talking, how much antler is needed to meet the demands of the market. Worse yet, we have only sketchy ideas of where the market is and how the product gets there. We are told that much of it is smuggled across borders to avoid import duties. It is as though we are dealing in drugs and with drug peddlers.

Secondly, because of the sudden awareness that antler is a precious commodity, antler production is increasing exponentially. For the first time in the history of the reindeer industry in Alaska, our native herders are realizing a reasonable cash income. But what will happen to this sudden bonanza when supply begins to meet demand? When New Zealand achieves its five-year goal of 500,000 red deer which we are told produce antler that is preferred over reindeer antler. Or when the antler buyers succeed in buying velvet antler from Scandinavia, let alone the Soviet Union, which I calculate could produce nearly 4,000 tons per year with no increase in the reindeer population. It is maddening to think that Alaska's reindeer herders might soon be "dumped" by antler buyers simply because our production, at less than 1% of possible worldwide production, is too small to warrant further consideration. Nevertheless, one must be realistic in matters economic and this brings me to my final point.

Even though the antler-producing nations have suddenly gone from "rags to riches," it would seemingly be prudent for them to develop contingency plans today to meet the realities of tomorrow. Plans should be developed now to facilitate a prompt, efficient transition from antler production to meat and meat by-product production. Fortunately, the market

for reindeer meat is enormous, it seems to be quite stable, and it can be very profitable. Moreover, it appeals to altruistic natures of most of our herders who think that it is at least as important to provide sustenance for their peoples as it is to provide an exotic medicine of doubtful value to a far-away people.